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**From:** Praskins, Wayne [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=4F47BC0A2C2E42A98347D59CD1A98B19-WPRASKIN]  
**Sent:** 4/29/2021 4:18:15 PM  
**To:** Hays, David C Jr CIV USARMY CENWK (USA) [David.C.Hays@usace.army.mil]  
**Subject:** RE: HPNS BUILD Direct Ingestion Results

BPRG assumes 16 hours per day exposure for residential scenario for both adult and child (last page of BPRG Users Guide).

That's 0.67 vs. Navy assumption of 0.53?

Wayne Praskins | Superfund Project Manager  
U.S. Environmental Protection Agency Region 9  
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415-972-3181

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**From:** Hays, David C Jr CIV USARMY CENWK (USA) <David.C.Hays@usace.army.mil>  
**Sent:** Thursday, April 29, 2021 7:14 AM  
**To:** Praskins, Wayne <Praskins.Wayne@epa.gov>  
**Subject:** RE: HPNS BUILD Direct Ingestion Results

Wayne, don't have much new from our conversation but I have been doing some comparison runs. Unfortunately not complete but for our next call will be. So far I would have the following questions\comments. I am still researching these as well so maybe don't have to discuss all of them today? First 3 would help me moving forward.

1. Was this meant to be a worse case estimate? Some assumption inputs suggest that while others do not (e.g. receptor position)
2. Was a custom library created for RESRAD BLD for DCFPAK? If custom, would they please send me that file or a input file with it?
3. I like the risk approach taken in the spreadsheet, however it appears we fail to account for all the terms in the RESRADBLD equations when calculating activity. The DCF is just one term in User manual equation E.2. Recommend recalculating activity. Likewise for the external calculation.
4. How was the source lifetime calculated? The source lifetime relates to the removable fraction removal lifetime, please see manual J.4.8, J.4.9, and J.4.10. The source lifetime of 3.65E6 years does result in a higher ingestion dose than if set to 26 years so conservative. Does not assume entire source ingested however.
5. Should EFH chapter 16 be used for activity timeframes rather than chapter 5? Appears we assuming homeschool and home office, is that correct?
6. How does the direct ingestion rate calculation correlate to the EFH? Note, The RESRADBLD user manual calculated 3.06E-6 for an adult worker.
7. The spreadsheet 1<sup>st</sup> tab, column G age ranges do not all appear to be from the EFH (e.g 11 old). How were the values determined?

Dave

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**From:** Praskins, Wayne <Praskins.Wayne@epa.gov>  
**Sent:** Monday, April 26, 2021 5:04 PM

**To:** Hays, David C Jr CIV USARMY CENWK (USA) <[David.C.Hays@usace.army.mil](mailto:David.C.Hays@usace.army.mil)>

**Subject:** [Non-DoD Source] RE: HPNS BUILD Direct Ingestion Results

Dave –

You may have noticed an error in cell X10 in the “Direct Ing Results” tab (representing the external slope factor for Ra-226).

The Navy informed me that the entry should be 1.52E-06, resulting in a total Ra-226+D risk of 6.09E-05.

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**From:** Praskins, Wayne

**Sent:** Thursday, April 22, 2021 2:49 PM

**To:** Hays, David C Jr CIV USARMY CENWK (USA) <[David.C.Hays@usace.army.mil](mailto:David.C.Hays@usace.army.mil)>

**Subject:** FW: HPNS BUILD Direct Ingestion Results

Dave –

Just got this from the Navy. They say they have run RESRAD BUILD with the modified inputs/assumptions we requested (direct rather than indirect ingestion, modified ingestion rate, and source expanded to floor and lower walls) and a clearer/more defensible conversion to risk.

If I understand correctly, rather than use RESRAD BUILD to generate risk values, they used RESRAD BUILD to estimate dose then applied isotope-specific DCFs in the spreadsheet to generate risk estimates.

You'll see in a note in the first tab that they calculate an ingestion rate based on depletion of source during the exposure period. They are using a value of  $8.1 \times 10^{-6}$  hr<sup>-1</sup>. (Can this value be compared to the EPA/BPRG ingestion rate in units of area/time?)

It looks like they also assumed no dissipation of the source (other than through ingestion?) and zeroed out loss of radon.

Can you take a look? Do you have a few minutes to discuss Monday or Tuesday? Thanks.

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**From:** Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <[derek.j.robinson1@navy.mil](mailto:derek.j.robinson1@navy.mil)>

**Sent:** Thursday, April 22, 2021 2:04 PM

**To:** Praskins, Wayne <[Praskins.Wayne@epa.gov](mailto:Praskins.Wayne@epa.gov)>

**Subject:** HPNS BUILD Direct Ingestion Results

Hi Wayne,

As discussed. attached is a file with RESRAD inputs and results.

Before we send you all of the RESRAD output files, we wanted to walk you through this and make sure that changes are not needed.

I will schedule a meeting for Tuesday next week. Please let me know your availability and/or if another day works better.

Best Regards,

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BRAC Environmental Coordinator  
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